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THIS IS UNEVALUATED INFORMATION

SOURCE As indicated

INFORMATION ON DEVELOPMENTS IN SOVIET ARCTIC RESEARCH

On 30 April 1954, a New York Times article bearing the date line Moscow, April 29, reported the discovery by Soviet scientists of a vast underwater divide, ranging 2 1/2-3 kilometers in height, between the New Siberian Islands and Greenland.

Examination of current Soviet literature revealed that the New York Times article was a paraphrase of excerpts from an article published in Pravda and in Izvestiya on 29 April under the headline "In the Presidium of the Academy of Sciences USSR." (1) A full translation of the original article is appended.

Current Soviet scientific literature was also searched for information relevant to the research and future plans mentioned in the original article, but no additional data were found.

However, in the course of a review of other writings on Arctic research and exploration, an earlier work by I. D. Papanin (2) was found to contain the following brief reference to an occurrence which might well have prefaced the discovery of the underwater divide: "As we approached Greenland, the ocean depth decreased somewhat, but it still reached 3 1/2 kilometers. On 8 November 1937, at a latitude of 83 56, we suddenly discovered that the depth of the ocean had decreased to 2,380 meters. This was very unexpected! We thought that possibly the ice floe had approached the slope of the continental shelf off Greenland; but great was our surprise when, on being carried still closer to the mainland, a depth of 3,500 meters was again disclosed. It became obvious that we had not yet reached the slope of the continental shelf anf that we were still over great depths. On 8 November, we had merely passed over an underwater elevation rising a full kilometer above the ocean floor surrounding it."

From the date of that expedition until the announcement from the Presidium of the Academy of Sciences, USSR, a lapse of nearly 17 years, there has been

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found in available Soviet scientific literature no further reference to this or any other underwater elevation, or to any related research, plans, personnel, or organization.

The search of current Soviet scientific literature covered many works in which reference to the Papanin expedition and discovery would have been relevant, but did not appear. For example, a survey of USSR oceanographic researches between 1917 and 1947 appeared in 1948 (3); in September 1948, V. N. Saks published a popular article on underwater valleys (4); in November 1949, Prof V. B. Shtokman wrote of the influence of sea bottoms on the direction of sea currents (5); in July 1950, Prof V. N. Nikitin discussed soundings in the north Arctic (6); and an extensive discussion of underwater landscapes was published in November 1950 (7).

Perevalov's review of the third edition of I. Yu. Vize's book Seas of the Soviet Arctic, mentions neither the 1937 observations nor Arctic studies of 1948 that led to the discovery of the divide (8). A March 1954 report (9) on the second volume (covering physical geography of oceans) of the authoritative Morskoy Atlas (Sea Atlas), devoted in part to the physical geography of the Arctic Ocean, makes no reference to the divide or to related studies and plans.

Particular aspects, e.g., deep sea sounding (10), are frequently encountered, but areas of application or reference are not discussed.

It is of interest to note that an exploration on the Kurile-Kamchatka Depression conducted by the Pacific Ocean Expedition of 1949-1952 under the auspices of the Institute of Oceanology, Academy of Sciences USSR, has recently been described in some detail (11), but there is no mention of a parallel Arctic expedition.

I.D. Papanin, born 1894, was leader of the 1937-1938 drifting station expedition. The stature of his work as an Arctic explorer can be measured by the fact that he was titled Hero of the Soviet Union and twice awarded the Order of Lenin. Following the Polar Expedition he was made a Doctor of Geographical Sciences, an honor far above the level of his formal education. In March 1938, he was named First Deputy Chief, and a year later, Chief of the Main Administration of the Northern Sea Route (12). His early work in the Arctic has been mentioned in a Russian publication as lately as 1950 (13), but there is no reference to any subsequent activity.

It should be noted that the most recent (May and June 1954) issues of the Russian periodical Priroda (Nature), a normal vehicle for the reporting of information of the type treated here, likewise contain no inkling of pertinent Soviet research in the Arctic area.

SOURCES

1. Pravda, Moscow, 29 Apr 54; Izvestiya, Moscow, 29 Apr 54

2. Papanin, I.D., Trudy dreyfuyushchey ekspeditsii 'Severnyy Polyus.' Nauchnyye otchety i rezul'taty nablyudeniy dreyfuyushchey ekspeditsii 1937-1938 gg., Leningrad, Izdatel'stvo Glavsevmorputi, 1940, Vol 1, pp 21-114 ("The Drifting Station")

3. Gur'yanova, Ye. F., "Thirty Years of Surveying USSR Seas," Vestnik Leningradskogo Universiteta, No 3, Mar 48

4. Saks, V.N., "Problems of Submarine Valleys," Priroda, No 9, Sep 48

5. Shtokman, V.B., "The Influence of Sea Bottom Relief on the Direction of Sea Currents," Priroda, No 11, Nov 49

6. Nikitin, V.N., "The Measurement of Great Depths in Seas and Oceans," Nauka i zhizn, No 7, Jul 50

7. Panov, D.G., "Submarine Landscapes of the World Ocean," Izvestiya Vesesoyuznogo Geograficheskogo Obshchestva, Nov/Dec 50, Vol 82, pp 582-607

8. Perevalov, V.A., "Review of V. Yu. Vize's Book Seas of the Soviet Arctic," Izvestiya Vsesoyuznogo Geograficheskogo Obshchestva, Jan/Feb 50, Vol 82, pp 103-105

9. Pravda, Moscow, 27 Mar 54

10. Udintsev, G.B., "The Method of Echometric Surveying in Marine Geology Investigations," Trudy Instituta Okeanologii, 1951, Vol 5, pp 17-34

11. Zenkevich, L.A., et al., "A Study of the Fuana of the Kurile-Kamchatka Depression From Data of the Pacific Ocean Expedition of the Institute of Oceanology, Academy of Sciences USSR," Priroda, No 2, Feb 54

12. Bol'shaya Sovetskaya Entsiklopediya (first edition), Moscow, 1939, Vol 44, p 82

13. Bol'shaya Sovetskaya Entsiklopediya (second edition), Moscow, 1950, Vol 3, p 33

APPENDIX. IN THE PRESIDIUM OF THE ACADEMY OF SCIENCES USSR

For some days the Presidium of the Academy of Sciences USSR has been hearing reports on the Soviet investigations and discoveries in the central Arctic during the postwar period, made by the Arctic Scientific Research Institute, under the Main Administration of the Northern Sea Route. As a result of the expeditions conducted and of the prolonged operations of a scientific station on drifting ice, complex investigations have been carried out in previously inaccessible regions of the central Arctic.

In 1948-1949, the expeditions discovered, and in succeeding years investigated, a mighty underwater mountain range, 2.5-3 kilometers high, which intersects the Arctic Ocean in a direction from the New Siberian Islands to Greenland; and also a number of other upheavals of the bottom which divide the ocean into several deep-water troughs. The first reliable chart of the depths of the central part of the Arctic Ocean has been made.

Data from the expedition's investigations permit one to review the problem of the geological past of the central part of the Arctic Basin. The erroneousness of the notion concerning the existence here of an ancient stable land mass has been revealed. The results of Soviet works have confirmed the correctness of the assumption that in the depths of the Arctic Ocean are buried folded structures extending from northeast Asia across the North Pole to Ellesmere Island.

Soviet scientists have gathered extensive data on the character of the water masses of the ocean and on the structure of the atmosphere over the Central Arctic, and have clarified important laws governing the movement across the Arctic of cyclones and anticyclones and of the drift of ice masses which is associated with them.

Confirmation was given to the hypothesis of Soviet scientists concerning the peculiarities of the geomagnetic field in the Central Arctic. They discovered and investigated the special magnetic anomaly that is widespread over tremendous areas of the Arctic Basin. A map made as a result of the operations of the expedition shows that the magnetic meridian becomes compressed in the region of the Taymyr Peninsula, and farther toward the northeast gathers into a thin bundle of almost parallel lines which are directed across the circumpolar region toward the Canadian Arctic archipelago; at the same time it was established that no "second magnetic pole" exists in the Arctic. New interesting data have been obtained on the character of the magnetic disturbances at high latitudes.

During operations on drifting ice in the central Arctic, various representatives of the animal world in the polar region were encountered at great distances from the coast (up to 1,000 and more kilometers): white bears, polar foxes, seals, sea hares, ducks, terns, snow buntings, and "sayki." In the watery depths were discovered new, hitherto unknown forms of plaktonic organisms, in particular a number of copepod crabs. Specific benthonic fauna of the Arctic Basin was observed which had not been encountered in other regions of the world ocean; also, a year-long cycle of observations was carried out on the development and movement of zooplankton and phytoplankton in the depths of the ocean. The absence of a number of plaktonic organisms in the benthonic waters of the western trough confirmed the fact that the underwater mountain range divides the central part of the Arctic Ocean into two isolated basins. Data have been collected for the first time on the bottom fauna of the eastern part of the Arctic Basin.

Biological observations of Soviet scientists have verified the views concerning the extreme poverty of life in the Central Arctic.

Their investigations in the high latitudes of the Arctic are connected very closely by the Soviet scientists with the national economy, primarily with the servicing of navigation along the Northern Sea Route by means of weather forecasts and predictions of ice conditions.

The Presidium of the Academy of Sciences USSR noted that the investigations have led to very great scientific discoveries, as a result of which many previous notions concerning the nature of the central part of the Arctic Ocean are subject to review. The proposal of the Arctic Scientific Research Institute that the underwater mountain range be named Podvodnyy Khrebet imeni M.V. Lomonosova, after M.V. Lomonosov, the founder of Arctic oceanography, was accepted.

The presidium approved the plan for further research operations in the Central Arctic and directed a number of institutes of the Academy of Sciences USSR to amplify their investigations in the Arctic.

In the current year, the Main Administration of the Northern Sea Route, under the Ministry of the Sea and River Fleet, will undertake new research operations in the Central Arctic. It is planned that the scientific stations of the Arctic Institute, which will conduct research according to an extensive program, will be located on drifting sea ice. The future systematic study of the high-latitude regions of the Arctic Ocean has important significance for weather forecasting and for the prediction of the state of ice masses on the Northern Sea Route.

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